

Patent Abstracts of Japan

PUBLICATION NUMBER : 03155376  
PUBLICATION DATE : 03-07-91

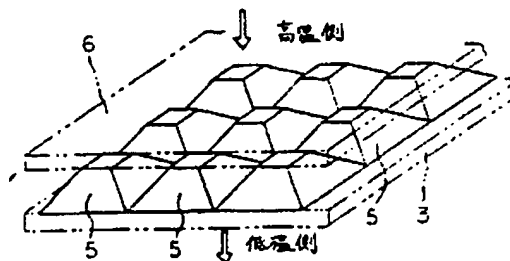
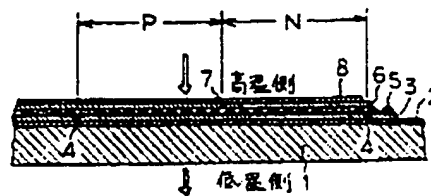
APPLICATION DATE : 09-11-89  
APPLICATION NUMBER : 01289942

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INT.CL. : H02N 11/00 H01L 35/14 H01L 35/32

TITLE : THERMOELECTRIC GENERATING  
ELEMENT



ABSTRACT : PURPOSE: To improve thermal efficiency of a thermoelectric element by employing a semiconductor having temperature dependency, higher in electrical conductivity than in thermal conductivity, as the thermoelectric material.

CONSTITUTION: A thermoelectric generating element is composed by sequentially bonding an electrical insulator 2, an electrode 3, an insulator 4, a thermoelectric material 5 and the like onto a substrate 1. The thermoelectric material 5 is formed into a truncated pyramid so that the cross sectional area for passing electricity and heat is small at the high temperature side and increases gradually toward the low temperature side. A semiconductor having temperature dependency, considerably higher in the electrical conductivity than in the thermal conductivity, is employed as the thermoelectric material 5. Although the electrical conductivity lowers in high temperature zone due to reduction of cross sectional area, the ratio of the thermoelectric element increases as a whole thus increasing the performance factor. By such arrangement, thermal efficiency is improved.

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